AMENDMENTS TO THE SPECIFICATION

On Page 1, please add the following paragraph after the title, and before the heading "*TECHNICAL FIELD*":

CROSS-REFERENCE TO RELATED APPLICATION

This application is based upon and claims the benefit of priority from Japanese Patent Application Nos. 2003-173914 and 2003-173953, both filed on June 18, 2003, Nos. 2003-177096 and 2003-177097, both filed on June 20, 2003, No. 2003-207699, filed on August 18, 2003, No. 2003-349223, filed on October 8, 2003, No. 2004-017247, filed on January 26, 2004 and No. 2004-158078, filed on May 27, 2004, the entire contents of which are incorporated herein by reference.

Please replace the Paragraph beginning on Line 13 of Page 1 and after the heading "*BACKGROUND ART*" with the following paragraph rewritten in amendment format:

In a conventional wireless packet communication method, a radio channel to be used is determined in advance. Prior to transmission of data packets, carrier sense is performed to detect whether or not that radio channel is idle. Only when that radio channel is idle, one data packet is transmitted. This management process enables a plurality of STAs to share one radio channel in a staggered manner ((1) ~~IEEE802.11 "MAC and PHY Specification for Metropolitan Area Networks," IEEE 802.11, 1998,~~ International Standard ISO/IEC 8802-11 ANSI/EEE Std. 802.11, 1999 edition, Information technology – Telecommunications and information exchange between systems – local and metropolitan area networks – Specific requirements – part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications; (2) "Low-powered Data Communication System/Broadband Mobile

Access Communication System (CSMA) Standard, ~~ARIB SDT-T71~~ ARIB STD-T71 version 1.0, Association of Radio Industries and Businesses, settled in 2000).

In the section titled "*DISCLOSURE OF THE INVENTION*", please replace the following paragraphs as indicated below.

Please replace the Paragraph beginning on Line 19 of Page 7 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 1,~~ a first aspect of the invention, a wireless packet communication method for transmitting X data packets simultaneously between two STAs by using a plurality of radio channels that are determined to be idle by carrier sense or using a radio channel that is determined to be idle and MIMO, or for transmitting X data packets simultaneously between two STAs by using both the above transmission methods where X corresponds to a total number of MIMOs of the plurality of radio channels is provided. When transmission rates of respective transmission media for transmitting the X data packets simultaneously are the same and a maximum data size of the data packets is Dmax, the wireless packet communication method is for fragmenting a data part extracted from a data field of one data frame to be transmitted to generate X data blocks that have data fields equal to or smaller than Dmax and the same packet time length (data size, transmission time), generates X data packets by adding a header field containing control information such as destination information and an FCS field containing an error checking code to each of the X data blocks, and transmits the X data packets simultaneously.

Please replace the Paragraph beginning on Line 8 of Page 8 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 2,~~ a second aspect of the invention, when it is possible to independently set transmission rates of transmission media for transmitting the X data packets simultaneously and a largest one of the transmission rates of the transmission media is a reference transmission rate, a maximum data size of the X data packets is set to a value obtained by (Dmax × a transmission rate of a corresponding line/a reference transmission rate); a data part extracted from a data field of one data frame to be transmitted is fragmented in accordance with transmission rates of respective lines to generate X data blocks having data fields equal to or smaller than the maximum data size of each line and having the same packet time length (transmission time); and X data packets are generated by adding a header field containing control information such as destination information and an FCS field containing an error checking code to each of the X data blocks, and are transmitted simultaneously.

Please replace the Paragraph beginning on Line 20 of Page 8 with the following paragraph rewritten in amendment format:

~~In the inventions of claims 1 and 2~~ In the first and second aspects of the invention, (a frame fragmentation method), a plurality of data packets that are equal to or smaller than the maximum data size and have the same packet time length can be generated from one data frame, and can be transmitted simultaneously by using a plurality of radio channels, or one radio channel and MIMO, or a plurality of radio channels and MIMO.

Please replace the Paragraph beginning on Line 25 of Page 8 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 3,~~ a third aspect of the invention, when transmission rates of transmission media for transmitting X data packets simultaneously are the same and a maximum data size of the X data packets is Dmax, X data blocks having data fields equal to or smaller than Dmax and a same packet time length (data size, transmission time) are generated by connecting and dividing data parts extracted from data fields of a plurality of data frames to be transmitted; and X data packets are generated by adding a main header field containing control information such as destination information and an FCS field containing an error checking code to each of the X data blocks, and are transmitted simultaneously.

Please replace the Paragraph beginning on Line 9 of Page 9 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 4,~~ a fourth aspect of the invention, when it is possible to independently set transmission rates of respective transmission media for transmitting X data packets simultaneously and a largest one of the transmission rates of the transmission media is a reference transmission rate, a maximum data size of the X data packets is set to a value obtained by (Dmax × a transmission rate of a corresponding line/the reference transmission rate); X data blocks having data fields equal to or smaller than the maximum data size in each line and the same packet time length (transmission time) are generated by connecting data parts extracted from data fields of a plurality of data frames to be transmitted and dividing the connected data parts in accordance with transmission rates of

respective lines; and X data packets are generated by adding a main header field containing control information such as destination information and an FCS field containing an error checking code to each of the X data blocks, and are transmitted simultaneously.

Please replace the Paragraph beginning on Line 21 of Page 9 with the following paragraph rewritten in amendment format:

In the ~~inventions of claims 3 and 4~~ third and fourth aspects of the invention, (a frame patching method), a plurality of data packets that are equal to or smaller than the maximum data size and have the same packet time length can be generated by connecting and dividing (cutting and pasting) a plurality of data frames, and can be transmitted simultaneously by using a plurality of radio channels, or one radio channel and MIMO, or a plurality of radio channels and MIMO.

Please replace the Paragraph beginning on Line 1 of Page 10 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 5,~~ a fifth aspect of the invention, when transmission rates of transmission media for transmitting X data packets simultaneously are the same and a maximum data size of the X data packets is Dmax, X data series having data fields equal to or smaller than Dmax are generated by aggregating data parts extracted from data fields of a plurality of data frames to be transmitted; X data blocks having the same packet time length (data size, transmission time) are generated by adding dummy data to a data series of the X data series except one having a largest data size; and X data packets are generated by adding a header field containing control information such as destination

information and an FCS field containing an error checking code to each of the X data blocks, and are transmitted simultaneously.

Please replace the Paragraph beginning on Line 11 of Page 10 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 6,~~ a sixth aspect of the invention, when it is possible to independently set transmission rates of respective transmission media for transmitting X data packets simultaneously and a largest one of the transmission rates of the transmission media is a reference transmission rate, a maximum data size of the X data packets is set to a value obtained by (Dmax × a transmission rate of a corresponding line/the reference transmission rate); X series having data fields equal to or smaller than the maximum data size in each line are generated by aggregating data parts extracted from data fields of a plurality of data frame to be transmitted; X data blocks having the same packet time length (transmission time) are generated by adding dummy data to a data series the X data series except one having a largest packet time length (transmission time); and X data packets are generated by adding a header field containing control information such as destination information and an FCS field containing an error checking code to each of the X data blocks, and are transmitted simultaneously.

Please replace the Paragraph beginning on Line 24 of Page 10 with the following paragraph rewritten in amendment format:

In the ~~inventions of claims 5 and 6,~~ fifth and sixth aspects of the invention, (a frame aggregation method), a plurality of data packets that are equal to or smaller than the maximum data size and have the same packet time length can be

generated by aggregating a plurality of data frames so as not to exceed the maximum data size, and can be transmitted simultaneously by using a plurality of radio channels, or one radio channel and MIMO, or a plurality of radio channels and MIMO.

Please replace the Paragraph beginning on Line 4 of Page 11 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 7,~~ a seventh aspect of the invention, in the case where it is possible to independently set the transmission rates of the transmission media for transmitting the X data packets simultaneously ~~in the invention of any one of claims 1, 3, and 5,~~ in any one of the first, third and fifth aspects of the invention, the transmission rates of the transmission media are made the same as a smallest one of the transmission rates.

Please replace the Paragraph beginning on Line 9 of Page 11 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 8, in the invention of claim 5,~~ an eight aspect of the invention, in the fifth aspect of the invention, the data series are generated by accepting the data frames to be transmitted in order and assigning the data frames to the respective transmission media until a total data size reaches a largest size not exceeding the maximum data size Dmax.

Please replace the Paragraph beginning on Line 13 of Page 11 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 9, in the invention of claim 5,~~ a ninth aspect of the invention, in the fifth aspect of the invention, the data series are generated by accepting the data frames to be transmitted in order, assigning one data frame to each of the transmission media, and repeating the assignment of one data frame until a total data size reaches a largest size that is equal to or smaller than the maximum data size Dmax.

Please replace the Paragraph beginning on Line 18 of Page 11 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 10, in the invention of claim 5,~~ a tenth aspect of the invention, in the fifth aspect of the invention, the data series are generated by accepting the data frames to be transmitted in order, assigning one data frame to each of the transmission media, and repeating the assignment of one data frame such that a next data frame is assigned to one of the transmission media that has a smallest data size of assigned data frames until a total data size reaches a largest size that is equal to or smaller than the maximum data size Dmax.

Please replace the Paragraph beginning on Line 24 of Page 11 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 11, in the invention of claim 5,~~ an eleventh aspect of the invention, in the fifth aspect of the invention, the data series are generated by employing one of the methods ~~recited in claims 8 to 10~~ according to the eighth to tenth aspects of the invention so that a total number of accommodated data frames is to be a maximum.

Please replace the Paragraph beginning on Line 2 of Page 12 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 12, in the invention of claim 6,~~ a twelfth aspect of the invention, in the sixth aspect of the invention, the data series are generated by accepting the data frames to be transmitted in order and assigning the data frames to the respective transmission media until a total data size reaches a maximum value equal to or smaller than the maximum data size.

Please replace the Paragraph beginning on Line 6 of Page 12 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 13, in the invention of claim 6,~~ a thirteenth aspect of the invention, in the sixth aspect of the invention, the data series are generated by accepting the data frames to be transmitted in order, assigning one data frame to each of the transmission media, and repeating the assignment of one data frame until a total data size reaches a largest size that is equal to or smaller than the maximum data size.

Please replace the Paragraph beginning on Line 11 of Page 12 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 14, in the invention of claim 6,~~ a fourteenth aspect of the invention, in the sixth aspect of the invention, the data series are generated by accepting the data frames to be transmitted in order, assigning one of the data frames to one of the transmission media, repeating the assignment of one data frame such that a next data frame is assigned to one of the transmission

media that has a smallest data size of assigned data frames until a total data size reaches a largest size that is equal to or smaller than the maximum data size.

Please replace the Paragraph beginning on Line 17 of Page 12 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 15, in the invention of claim 6,~~ a fifteenth aspect of the invention, in the sixth aspect of the invention, the data series are generated by employing one of the methods ~~recited in claims 12 to 14~~ according to the twelfth to fourteenth aspects of the invention so that a total number of accommodated data frames is to be a maximum.

Please replace the Paragraph beginning on Line 20 of Page 12 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 16, in the invention of claim 5 or 6,~~ a sixteenth aspect of the invention, in the fifth or sixth aspect of the invention, the data series are generated to contain sub-headers for identifying the data frames, respectively.

Please replace the Paragraph beginning on Line 23 of Page 12 with the following paragraph rewritten in amendment format:

According to the ~~invention recited in claim 17,~~ a seventeenth aspect of the invention, when transmission rates of transmission media for transmitting X data packets simultaneously are the same and a maximum data size of the data packets is Dmax, the X data packets are generated by the method ~~recited in claim 1~~ according to the first aspect of the invention in the case where a number of data

frames to be transmitted is 1; the X data packets are generated by the method ~~recited in claim 3 or 5~~ according to the third or fifth aspect of the invention, in the case where the number of the data frames to be transmitted is 2 or more and it is possible to generate data packets equal to or smaller than a maximum data size in each line by the connection and division ~~as recited in claim 3~~ according to the third aspect of the invention or the aggregation ~~as recited in claim 5~~ according to the fifth aspect of the invention; and the X data packets are generated by the method ~~recited in claim 1~~ according to the first aspect of the invention, in the case where the number of the data frames to be transmitted is 2 or more and it is impossible to generate the data packets equal to or smaller than the maximum data size in each line by the connection and division ~~as recited in claim 3~~ according to the third aspect of the invention or aggregation ~~as recited in claim 5~~ according to the fifth aspect of the invention.

Please replace the Paragraph beginning on Line 10 of Page 13 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 18,~~ an eighteenth aspect of the invention, when it is possible to independently set transmission rates of transmission media for transmitting X data packets simultaneously and a largest one of the transmission rates of the transmission media is a reference transmission rate, a maximum data size of the X data packets is set to a value obtained by (Dmax × a transmission rate of a corresponding line/the reference transmission rate); the X data packets are generated by the method ~~recited in claim 2~~ according to the second aspect of the invention in the case where a number of data frames to be transmitted is 1; the X data packets are generated by the method ~~recited in claim 4 or 6~~

according to the fourth or sixth aspects of the invention, in the case where the number of the data frames to be transmitted is 2 or more and it is possible to generate data packets equal to or smaller than a maximum data size in each line by the connection and division ~~as recited in claim 4~~ according to the fourth aspect of the invention or the aggregation ~~as recited in claim 6~~ according to the sixth aspect of the invention; and the X data packets are generated by the method ~~recited in claim 2~~ according to the second aspect of the invention, in the case where the number of the data frames to be transmitted is 2 or more and it is impossible to generate the data packets equal to or smaller than the maximum data size in each line by the division and connection ~~as recited in claim 4~~ according to the fourth aspect of the invention or aggregation ~~as recited in claim 6~~ according to the sixth aspect of the invention.

Please replace the Paragraph beginning on Line 25 of Page 13 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 19, in the invention of claim 1 or 2,~~ a nineteenth aspect of the invention, in the first or second aspect of the invention, X data packets that are generated after simultaneous transmission of the X data packets are transmitted continuously without performing carrier sense, until a time corresponding to a transmission time of data packets generated from one data frame before being fragmented passes.

Please replace the Paragraph beginning on Line 5 of Page 14 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 20, in the invention of claim 1 or 2,~~ a twentieth aspect of the invention, in the first or second aspect of the invention, X

data packets that are generated after simultaneous transmission of the X data packets are transmitted simultaneously consecutively X times without performing carrier sense.

Please replace the Paragraph beginning on Line 8 of Page 14 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 21, in the invention of any one of claims 1 to 6,~~ a twenty-first aspect of the invention, in any one of the first to sixth aspects of the invention, when one of the two STAs is an AP and the other is a mobile terminal, one or more data frames are selected from data frames addressed to a same mobile terminal in a transmission buffer of the AP within a range in which the one or more data frames are able to be accommodated in data packets to be transmitted simultaneously, the transmission buffer storing data frames transmitted to the mobile terminal from a device connected to the AP; a source address of the device connected to the AP is added to each of frame bodies of the one or more data frames and the frame bodies are connected; the X data packets are generated by adding a MAC header to each of data blocks obtained by dividing the connected frame bodies by a number of simultaneous transmissions, and are transmitted simultaneously.

Please replace the Paragraph beginning on Line 19 of Page 14 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 22, in the invention of any one of claims 1 to 6,~~ a twenty-second aspect of the invention, in any one of the first to sixth aspects of the invention, when one of the two STAs is an AP and the other is a

mobile terminal, one or more IP packets are selected from IP packets addressed to a same AP in a transmission buffer of the mobile terminal within a range in which the one or more IP packets are able to be accommodated in data packets to be transmitted simultaneously, the transmission buffer being storing IP packets to be transmitted to a device connected to the AP; a destination address of the device connected to the AP is added to each of the one or more IP packets and the one or more IP packets are connected; and the X data packets are generated by adding a MAC header to each of data blocks obtained by dividing the connected frame bodies by a number of simultaneous transmissions, and are transmitted simultaneously.

Please replace the Paragraph beginning on Line 4 of Page 15 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 23, in the invention of any one of claims 1 to 6,~~ a twenty-third aspect of the invention, in any one of the first to sixth aspects of the invention, when one of the two STAs is an AP and the other is a mobile terminal, one or more data frames are selected and aggregated from data frames addressed to a same mobile terminal in a transmission buffer of the AP within a range in which the one or more data frames are able to be accommodated in data packets to be transmitted simultaneously, the transmission buffer storing data frames transmitted to the mobile terminal from a device connected to the AP; a source address of the device connected to the AP is added to each of frame bodies of the selected data frames; a MAC header is further added to each of the frame bodies of the selected data frames to generate the X data packets; and the X data packets are transmitted simultaneously.

Please replace the Paragraph beginning on Line 14 of Page 15 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 24, in the invention of any one of claims 1 to 6,~~ a twenty-fourth aspect of the invention, in any one of the first to sixth aspects of the invention, when one of the two STAs is an AP and the other is a mobile terminal, one or more IP packets are selected and aggregated from IP packets addressed to a same AP in a transmission buffer of the mobile terminal within a range in which the selected IP packets are able to be accommodated in data packets to be transmitted simultaneously, the transmission buffer storing IP packets to be transmitted to a device connected to the AP; a destination address of the device connected to the AP is added to each of the selected IP packets; a MAC header is further added to each of the selected IP packets to generate the X data packets; and the X data packets are transmitted simultaneously.

Please replace the Paragraph beginning on Line 23 of Page 15 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 25, in the invention of any one of claims 1 to 6,~~ a twenty-fifth aspect of the invention, in any one of the first to sixth aspects of the invention, when one of the two STAs transfers data frames accumulated in a transmission buffer to the other STA, the one STA generates data packets by the method ~~recited in any one of claims 28 to 33~~ according to any one of the twenty-first to twenty-fourth aspects of the invention and transmits the data packets in one lump or simultaneously, for data frames addressed to the other STA.

Please replace the Paragraph beginning on Line 3 of Page 16 with the following paragraph rewritten in amendment format:

According to ~~the invention recited in claim 26, in the invention of any one of claims 1 to 6,~~ a twenty-sixth aspect of the invention, in any one of the first to sixth aspects of the invention, a communication device is connected to each of the two STAs. When one of the two STAs transfers data frames that are accumulated in a transmission buffer and are transmitted from a source device connected to the one STA to a destination device connected to the other STA, the one STA generates data packets by the method recited in any one of claims 28 to 33 and transmits the data packets in one lump or simultaneously, for data frames addressed to the other STA.

On page 16, please add the following paragraph beginning on line 12 and after the heading *"BRIEF DESCRIPTION OF THE DRAWINGS":*

The nature, principle, and utility of the invention will become more apparent from the following detailed description when read in conjunction with the accompanying drawings in which like parts are designated by identical reference numbers, in which:

Please replace the Paragraph beginning on Line 12 of Page 18 with the following paragraph rewritten in amendment format:

Fig. 26 is ~~a flowchart of a procedure~~ an exemplary frame format according to a sixteenth embodiment of the present invention;

Please replace the Paragraph beginning on Line 14 of Page 18 with the following paragraph rewritten in amendment format:

Fig. 27 is ~~a flowchart of a procedure~~ an exemplary frame format according to a seventeenth embodiment of the present invention;

On Page 47, please add the following paragraph beginning on Line 23 and before the heading "*INDUSTRIAL APPLICABILITY*":

The invention is not limited to the above embodiments and various modifications may be made without departing from the spirit and scope of the invention. Any improvement may be made in part or all of the components.